

REMARKS

Claims 1-45 were pending in the application. Claims 2-3, 14, 16-17, and 28-45 have been cancelled. Claims 1, 4-13, 15, and 18-27 have been amended. Claims 46-50 are newly submitted. Claims 1, 4-13, 15, 18-27, and 46-50 are currently pending in the application. Reconsideration is respectfully requested in view of the amendments to the claims and the following remarks.

I. The § 102/103 Rejections

Claims 1-3, 5-10, 14-17, 19-24, 28-31, 33-38, and 42 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,775,662 to Witkowski et al. (“Witkowski”).

Claims 4, 11-13, 18, 25-27, 32, and 39-41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Witkowski in view of U.S. Patent No. 5,428,737 to Li et al. (“Li”).

Claim 1, as amended, recites a structure for representing a query statement having an atomic query element and a combined query element related by a combined operator. In particular, the structure includes an abstract superclass, in which an instance of the abstract super class represents the query statement. The abstract superclass further comprises a first subclass and a second subclass, in which an instance of the first subclass represents the atomic query element and an instance of the second subclass represents the combined query element.

A. Witkowski Fails To Disclose a Structure Including an Abstract Superclass In Which an Instance of the Abstract Superclass Represents a Query Statement

Having an Atomic Query Element and a Combined Query Element Related by a Combined Operator

Witkowski discloses a system for rewriting queries so that the queries can be executed more efficiently (see Abstract). In particular, queries that include an outer query that references the result set of an aggregate query are rewritten so that the set of groupings specified by the aggregate query omit groupings that only produce rows that cannot satisfy predicates of the outer query. Thus, when an inner query is computed, only rows for groupings that could possibly satisfy the predicates of the outer query are generated (col. 5, ll. 48-57).

FIG. 5 of Witkowski illustrates an example predicate tree 501 that is generated for filtering the criteria (or predicates) of a referencing (outer) query (col. 10, ll. 57-58). The predicate tree is used for generating qualifying patterns that describe qualifying groupings – i.e., those groupings that could possibly satisfy the predicates of the outer query (col. 10, ll. 12-19). The qualifying patterns are represented as bitmaps within Witkowski's system (col. 9, ll. 35-38).

Although Witkowski discloses use of a predicate tree in determining groupings that could possibly satisfy the predicates of the outer query, Witkowski fails to disclose a structure that includes an abstract superclass, in which an instance of the abstract super class represents a query statement having an atomic query element and a combined query element related by a combined operator.

Witkowski fails to disclose how the predicate tree 501 is represented within Witkowski's system. That is, Witkowski is silent as to how a query is represented within Witkowski's system. Nor is it inherent that a query be represented by an instance of an

abstract superclass. *See* MPEP 2163.07 - “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Moreover, in rejecting claim 1, the Examiner cites item 511 of FIG. 5 as disclosing a superclass. Applicant respectfully disagrees. The item 511 corresponds only to operator between expressions of a predicate, and does not represent a query statement having an atomic query element and a combined query element related by a combined operator.

B. Li Fails To Disclose a Structure Including an Abstract Superclass In Which an Instance of the Abstract Superclass Represents a Query Statement Having an Atomic Query Element and a Combined Query Element Related by a Combined Operator

Li discloses techniques for translating between a textual format and a visual format of relational database queries (see Abstract). However, as with Witkowski, Li fails to disclose a structure that includes an abstract superclass, in which an instance of the abstract super class represents a query statement having an atomic query element and a combined query element related by a combined operator, as required by claim 1.

C. The claim has limitations not taught by either reference

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.

Witkowski and Li fail to disclose a structure that includes an abstract superclass, in which an instance of the abstract super class represents a query statement having an atomic query element and a combined query element related by a combined operator. Consequently, the combination of Witkowski and Li cannot render claim 1 obvious.

For at least these reasons, Applicant submits that claim 1, and the claims that depend therefrom, are in condition for allowance.

D. Other Independent Claims

Claims 15 and 46 each incorporates limitations similar to those of claim 1. Claims 15 and 46 (and the claims that depend therefrom) are also allowable over Witkowski and Li for reasons corresponding to those set forth with respect to claim 1.

Should any unresolved issues remain, the Examiner is invited to call the undersigned at the telephone number indicated below.

Respectfully submitted,
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